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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,686	03/28/2001	Satoshi Nakamura	040894-5653	2438

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EXAMINER

CHERVINSKY, BORIS LEO

ART UNIT

PAPER NUMBER

2835

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 22

Application Number: 09/818,686
Filing Date: March 28, 2001
Appellant(s): NAKAMURA, SATOSHI

Robert J. Goodell, Reg. No. 41,040
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 04/14/03.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The rejection of claims 1, 6, 7, 10-13 and claims 15-22 stand or fall together.

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,058,013	Christopher et al.	05-2000
JP404113695A	Kamioka	04-1992

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopher et al. in view of Kamioka.

Christopher et al. disclose a circuit board 201 having electronic components 119, 225 provided with a heat radiating plate (not numbered) and being mounted on its surface by soldering, heat radiating means 107 made of metal, having a plated layer and being soldered to the underside of the circuit board, a first and second heat radiating patterns provided on the upper side of the circuit board and the underside of the circuit board and the heat radiating patterns are connected by plated through holes 205 and 229, the heat radiating patterns constitute circuits formed on the circuit board. Christopher discloses the claimed invention except the second radiating pattern having larger area than the first radiating pattern. Kamioka discloses heat radiating patterns 12 (see Fig. 3) on the upper side of the circuit board 5 contacting the electronic component 8 and on the underside surface of the circuit board contacting the heat radiating plate 3; the heat radiating pattern on the underside having larger area than the one on the upper side. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the second radiating pattern with larger area as disclosed

Art Unit: 2835

by Kamioka in the structure disclosed by Christopher et al. to have larger contact area with the heat radiating plate for sufficient heat dissipation.

(11) Response to Argument

Appellant argues that the element 12 of Kamioka reference is not the heat radiating pattern as recited in both independent claims 1 and 15 but being rather insulating element. This argument is not persuasive because elements 12 provide only electrical insulation as stated in Kamioka's reference translated version on Page 6, lines 23-25.

On Page 6, line 25 and Page 7, line 1 of the same document it is indicated that elements 12 exclude presence of air, which can be impediment for thermal conduction. For this reason at least it can be concluded that the elements 12 provide thermal conduction from the heat generating component 8 through vias 6 to the heat dissipating elements 3 and 2, therefore, using Appellant's terminology, elements 12 constitute the heat radiating pattern. The electrical insulation property of elements 12 is irrelevant in view of claimed limitations of claims 1 and 15.

For the above reasons, it is believed that the rejections should be sustained.

Art Unit: 2835

Respectfully submitted,

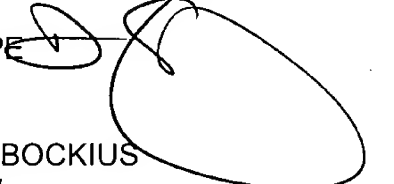
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PRIMARY EXAMINER



August 12, 2003

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